

Improvement of Fitness in Third and Fourth Grade Students in a School Based Program

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Elementary age children naturally enjoy physical activity (PA) when the focus is on fun and games. It is assumed that enjoyment of activity may lead to maintained practice of activity which can lead to improvements in performance and overall fitness. **PURPOSE:** To determine the optimal environment to foster a positive relationship between elementary age students with physical activity as well as to achieve improvements in performance using the Progressive Aerobic Cardiovascular Endurance Run test (PACER) and percent body fat using bioelectrical impedance analysis (BIA). **METHODS:** The participants were recruited through a sign up process for an eight week program which met three times per week after school. Some participants also participated in the recess laps program which was during school hours five days per week. The 28 male (14) and female (14) subjects ranged in age from 10± years. Assent and consent forms were received and approval from the Gannon University IRB was received. PRE and POST tests were performed at the onset and culmination of program utilizing the PACER and BIA. A paired t-test was run using SPSS software to compare PRE and POST tests. **RESULTS:** Performance on the PACER test significantly increased from 21.81 to 30.84%, $t(30)=6.02$, $p=0.000$. BIA also increased from 24.93 to 26.35%, $t(22)=5.37$, $p=0.000$. **CONCLUSION:** Performance improvements were seen in the PACER test and the environment appears conducive for creating enhanced performance when there is a varied aerobic activities. The increase in BIA may be attributed to non-identical PRE and POST test environments, developmental age of participants and control of external factors including intake and hydration outside of the program.